

BROWNFIELD REDEVELOPMENT ASSESSMENT REPORT

FOR

JEFFERSON/CHENE

PROPERTY

DETROIT, MICHIGAN

REVISED

MARCH 31, 1997

REPORT PREPARED BY: Nabil Seif DATE: 3/31/97

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REVIEWED AND APPROVED BY: George Carpenter DATE: 3/31/97

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EXECUTIVE SUMMARY

On November 28, 1995, Michigan Department of Environmental Quality (MDEQ) Pre-Remedial Group staff collected 11 surficial soil samples and 5 soil boring samples from suspected areas of contamination at the Jefferson/Chene (JC) property in the City of Detroit.

Analysis of the soil and soil boring samples collected from JC property during the Brownfield Redevelopment Assessment (BFRA), detected the presence of benzo (a) pyrene, arsenic, and manganese. These contaminants of concern were detected at concentrations greater than the Generic Residential Cleanup Criteria of Part 201 of the Natural Resources and Environmental Protection Act (NREPA), 1994 PA 451, as amended (formerly known as the Michigan Environmental Response Act). Because these contaminants were detected at concentrations in excess of the Generic Residential Cleanup criteria of the NREPA, the JC property qualifies as facility under Part 201. No contaminants were detected at concentrations greater than the Generic Industrial Cleanup Criteria of Part 201 of the NREPA.

Based on the findings of the BFRA investigation and the Michigan Department of Community Health (MDCH) Health Consultation Assessment, the following issues should be addressed before or during the redevelopment of the JC property:

- Based on the concentration of the contaminants in the soils of the property, there is little potential for exposure to contaminants at the property under its current use as a parking lot.
- Excavation for the construction of any buildings on the properties might expose workers or subsequent occupants to subsurface soils. Therefore, soil samples should be collected and analyzed from borings to the depth of any proposed excavation on the properties before the excavation begins. These results should be compared to the Generic Industrial Cleanup Criteria for Direct Contact to soils to determine whether any exposure risk to site workers could occur.
- If the intended use of the property is residential, the contamination of concern should be addressed by removal or mitigation of contaminated soils to the Residential Cleanup Criteria

INTRODUCTION

The MDEQ Pre-Remedial Group was contracted via a cooperative agreement with the U. S. Environmental Protection Agency (EPA) to conduct BFRA as part of the Detroit Brownfields Pilot Project. A brownfield is a property, or a portion thereof, that has actual or perceived contamination and an active potential for redevelopment or reuse. Properties which meet these qualifications have been selected by the city of Detroit to be investigated in the Detroit Brownfields Pilot Project.

BFRAs are intended to provide information on abandoned properties where potential environmental contamination may be acting as an impediment to future redevelopment activities. MDEQ Pre-Remedial Group staff conduct environmental investigations to determine the types and locations of past and present industrial activities, potential environmental migration pathways of concern, types and concentrations of potential contaminants and the need for remedial and/or removal actions on the property. The BFRA included file and information searches, a reconnaissance inspection of the property, and the collection of surficial soil and soil boring samples.

PROPERTY BACKGROUND

Property Description

The JC property is located on the south side of East Jefferson Avenue east of Chene Street and consists of reversed 'L' shaped parcel that extends from the south side of East Jefferson Avenue to the north side of Franklin Street and west to the northeast corner of Franklin and Chene Streets in the City of Detroit, Wayne County. See Figure 1 for the Property Location Map.

Property History

Early Sanborn maps dating back to 1897 show at that time this parcel contained large residential dwellings that fronted on East Jefferson Avenue. In 1897 the northeast corner of Chene and Franklin Streets was the site of the Detroit Gas Company Chene Street Station that contained a 200,000 cubic foot "Gasometer" a coal gas storage facility. In about 1916, the "Gasometer" was replaced by a metal working factory that produced unknown products. The factory extended along the east side of Chene from East Jefferson to Franklin. The facility contained a machine shop, tin shop, forge shop and hardening room. The 1922 Sanborn map shows that the current City of Detroit Department of Public Works (DPW) maintenance building had been built, however the original occupant is not known. The 1969 Sanborn map shows that the DPW maintenance building had taken over the northeast corner of Chene and Franklin Streets and a gasoline station occupied the southeast corner of Jefferson and Chene. The DPW facility operated until the late 1970s and was demolished in the mid 1980s.

PROCEDURES AND RESULTS

On November 28, 1995, the investigation team conducted a reconnaissance inspection of the JC property and surrounding area to make observations to aid in characterizing the property. The reconnaissance inspection included a walk-through of the property to determine appropriate health and safety requirements for conducting investigation activities. The team also determined sampling locations during the reconnaissance inspection. Upon completion of the reconnaissance inspection, the investigation team conducted the sampling task.

Reconnaissance Inspection Observations

The property is approximately 145,000 square-feet and is currently a vacant lot covered with gravel. There was no sign of oil stained soils, however, small piles of sliced potatoes and other vegetable matter were found on the center of the parcel. There is a Shell Gas Station on the northwest corner of the parcel. See Figure 2 for the Property Features Map. Photographs of the JC properties taken during the BFRA are provided in Appendix A.

As part of the BFRA, the MDCH accompanied the investigation team during the reconnaissance inspection and performed a Health Consultation Assessment. The results of the MDCH assessment can be found in the Health Consultation of the JRJC properties in Appendix B.

Sampling Procedures and Results

On November 28, 1995, MDEQ Pre-Remedial Group staff collected surficial soil samples and soil boring samples according to a predetermined grid at the JC property. These samples were collected by the investigation team to determine whether EPA Target Compound List compounds (organic compounds) and Target Analyte List analytes (inorganic compounds) were present at the properties.

Standard MDEQ collection and decontamination procedures, as outlined in the work plan, were adhered to during the collection of all samples. All samples were packaged and shipped in accordance with EPA required procedures and all EPA quality assurance/quality control procedures were followed. Laboratory analytical data for all the sample analyses are provided in Appendix C.

Surficial Soil Samples

The intent of the surficial soil sampling was to characterize any possible contamination on the property, determine the potential for possible contaminants migration from potential source areas and identify the potential health and safety concerns, such as direct contact threats posed to nearby residential populations and future workers from these soils, associated with the surficial soils at the property.

Eleven (11) surficial soil samples were collected from JC property. All surficial soil samples were collected using stainless steel trowels according to the procedures outlined in the work plan. See Figure 3 for a map showing Surficial Soil Sample Locations. For a description of the surficial soil sample locations and the sample characteristics, refer to Table 1. Table 2 presents a summary of the surficial soil samples analytical results with comparisons to the Generic Cleanup Criteria of Part 201 of the NREPA.

Soil Boring Samples

The intent of the soil boring sampling was to characterize any possible contamination in the deep soils on the property, determine if any downward migration had occurred from probable source areas and to determine the potential health and safety concerns, including direct contact threats posed to nearby residentila populations and future workers asociated with the deep soil at the property.

Five (5) soil boring samples (SB1, SB2, SB3, SB4 and SB5) were collected from the JC property. All soil boring samples were collected utilizing a Geoprobe rig according to the procedures outlined in the work plan. See Figure 4 for a map showing Soil Boring Sample Locations. A description of the Soil Boring Sample Locations and the Sample Characteristics can be found in Table 3. Table 4 presents a summary of the Soil Boring Sample Analytical Results with comparisons to the Generic Cleanup Criteria of Part 201 of the NREPA.

Metal Detection Survey

A metal detector was used to survey each deep soil sample location before using the Geoprobe unit. Metal detectors, unlike magnetometers, work on both ferrous and non-ferrous metals; magnetometers only work on ferrous metals. Metal detectors have a relatively short detection range. Metal detectors are limited in depth of penetration and will detect all types of metals. A metal detector responds to the electrical conductivity of metal targets, which is relatively high compared to normal soil conductivities. Small metal objects, like spray cans, can be detected at a distance of about one meter. Because the response of a detector increases with the target's surface area, larger objects, like 55-gallon drums, may be detected at depths of 1-3 meters. Massive piles of metal may be detected at depths up to 3-6 meters. Metal detectors are limited in depth of penetration and will detect all types of metals. No significant metallic responses typical of 55-gallon drums or underground storage tanks were detected at any of the deep soil sample locations.

DISCUSSION

Analysis of the surficial soil and soil boring samples collected from the JC property during the BFRA detected the presence of benzo (a) pyrene, 1,500-3,800 ug/kg; arsenic, 5.9-7.4 mg/kg; and manganese, 3,990-17,500 mg/kg. These contaminants of concern were detected at concentrations greater than the Generic Residential Cleanup Criteria of Part 201 of the NREPA. Because these contaminants were detected at concentrations in excess of the Generic Residential Cleanup Criteria, the JC property qualifies as a facility under Part 201. No contaminants were found to be greater than the Generic Industrial Cleanup Criteria of Part 201 of the NREPA.

Based on the findings of the BFRA investigation and the MDCH Health Consultation Assessment, the following issues should be addressed before or during the redevelopment of the JRJC properties.

- Based on the concentration of the contaminants in the soils of the property, there is little potential for exposure to contaminants at the properties under its current use as a parking lot.
- The contaminants of concern should be considered with respect to responsibilities that may exist under Part 201. The nature of any response activity that may be required is dependent on the intended use of the property and the party's liability under Part 201. A person who is liable for the contamination is required to achieve cleanup of the property consistent with the cleanup criteria. The relevant criteria are a function of the intended property use, such as residential, commercial or industrial. A non-labile developer is not required to implement a cleanup to achieve the appropriate cleanup criteria. However, a non-labile party must comply with the "due care" provisions specified in Section 7a of Part 201. Section 7a requires that the contamination must not be exacerbated, that care must be taken to assure that the unacceptable exposure do not occur as a result of the use of the property, and that reasonable precautions be taken against the acts of third parties. Further details about cleanup criteria and due care provisions may be obtained by contacting the MDEQ Environmental Response Division at the Livonia District Office, 313-953-0241.
- Excavation for the construction of any buildings on the properties might expose workers or subsequent occupants to subsurface soils. Therefore, soil samples should be collected and analyzed from borings to the depth of any proposed excavation on the properties before the excavation begins. These results should be compared to the Generic Industrial Cleanup Criteria for Direct Contact to soils to determine whether any exposure risk to site workers could occur.
- The potential presence of underground storage tank(s) at the property should be confirmed and, if present should be addressed before redevelopment.

BIBLIOGRAPHY

1. Michigan Department of Environmental Quality, Environmental Response Division, Superfund Section, Pre-Remedial Site Files, Jefferson/Chene.
2. Michigan Department of Community Health, Health Consultation for Jefferson/Chene

FIGURE 1

PROPERTY LOCATION MAP

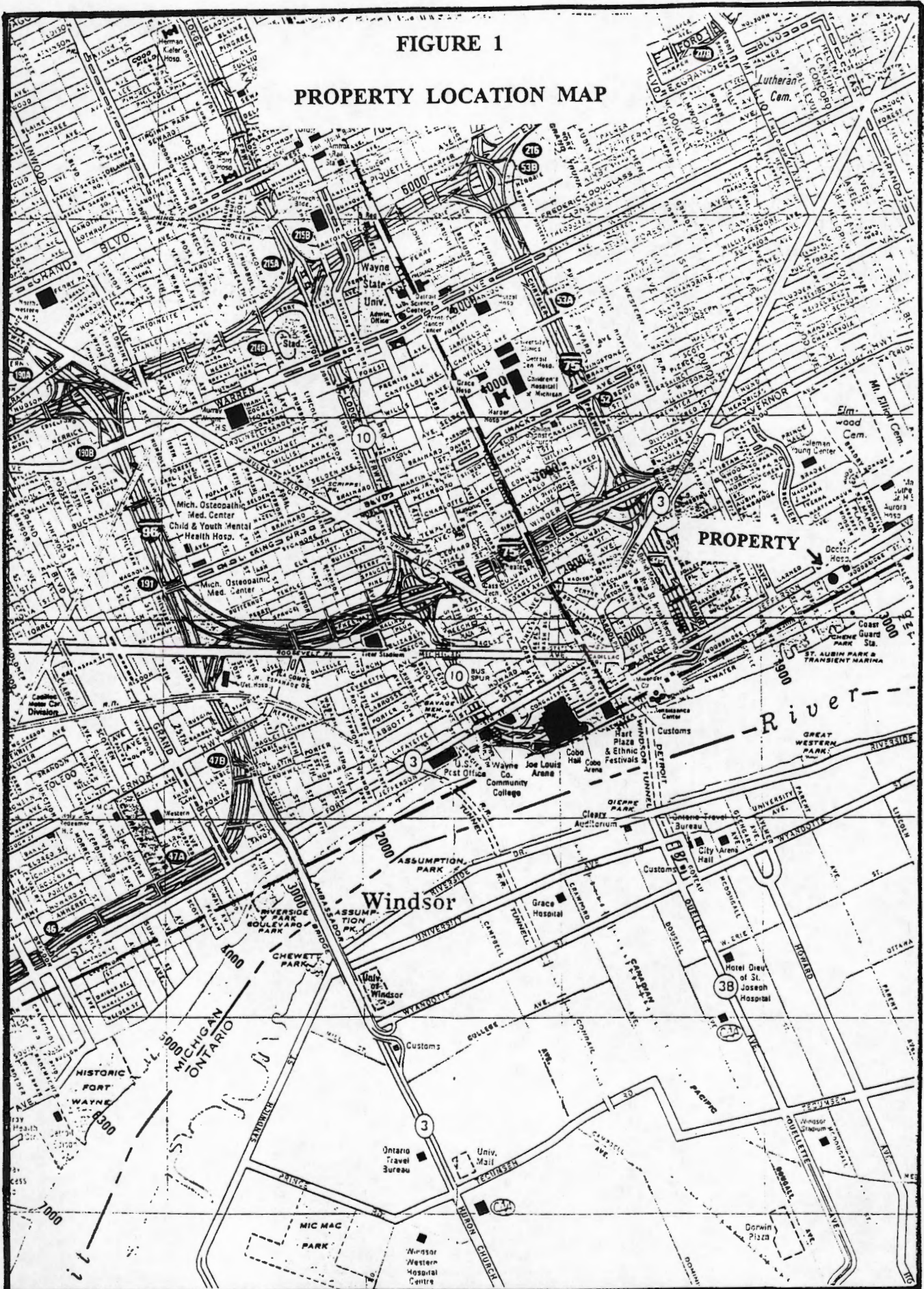
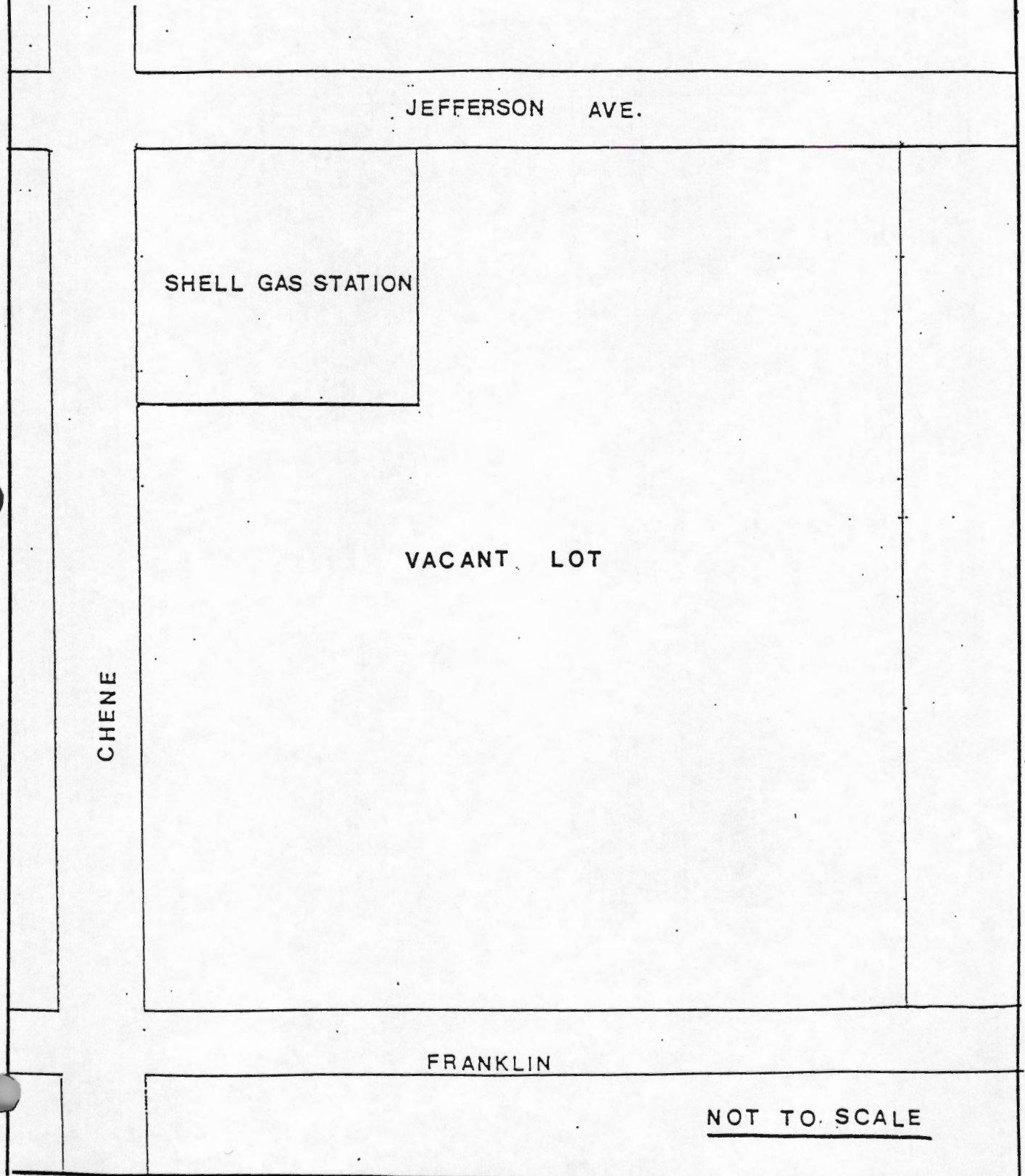


FIGURE 2
PROPERTY FEATURES MAP



NOT TO SCALE

FIGURE 3

SURFICIAL SOIL SAMPLE LOCATIONS

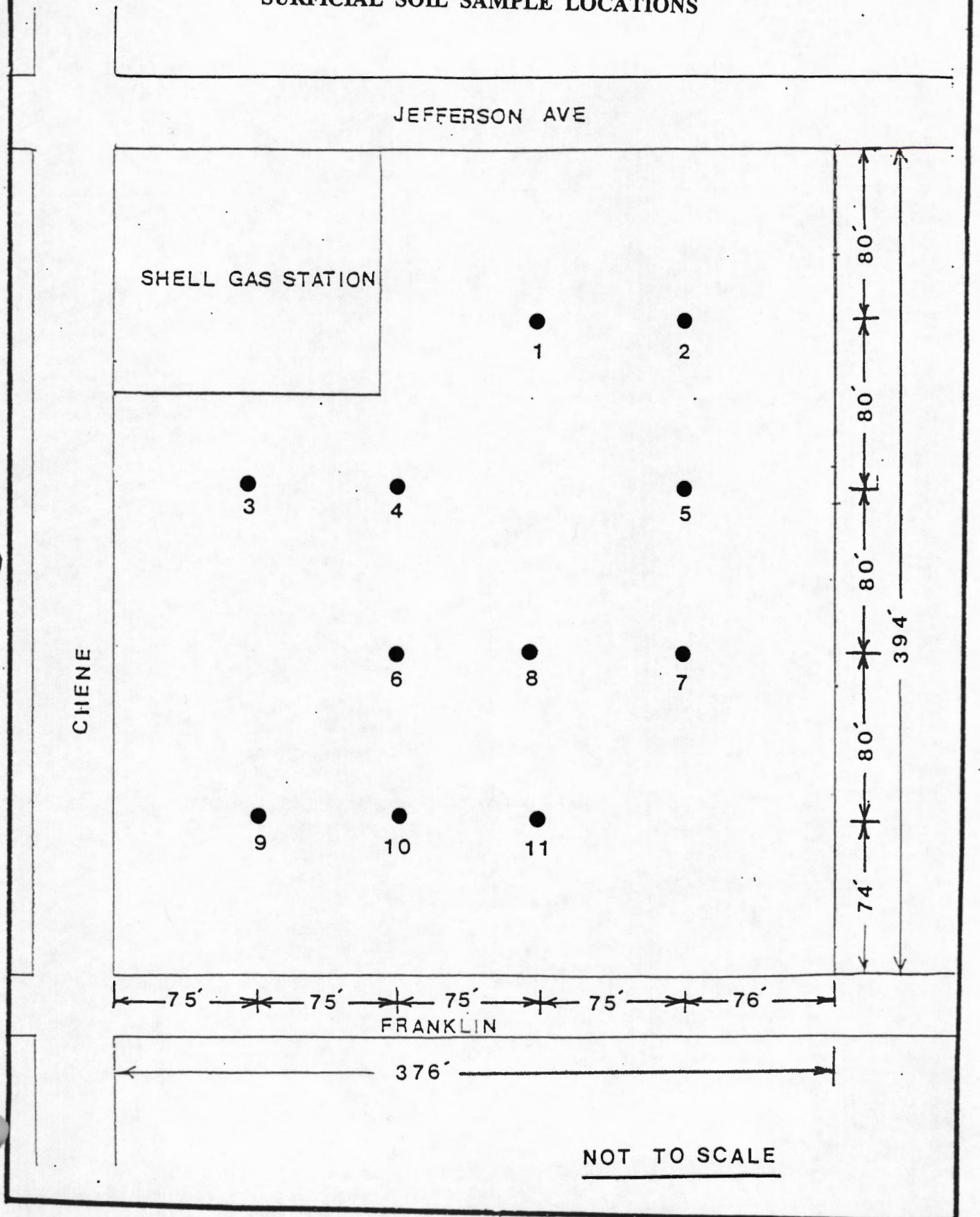
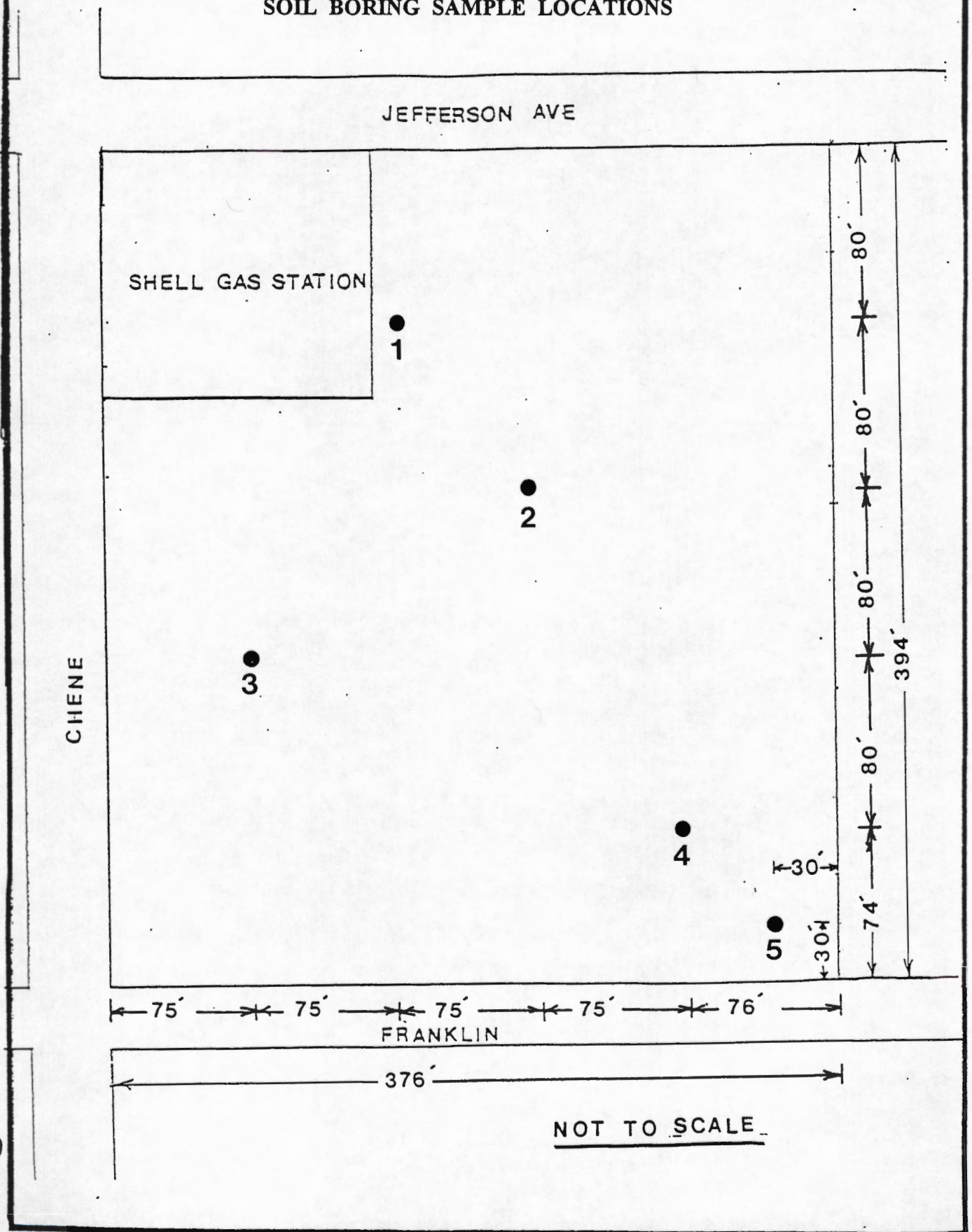


FIGURE 4

SOIL BORING SAMPLE LOCATIONS



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TABLE 1
SOIL SAMPLE DESCRIPTIONS

SAMPLE#	LOCATION	APPEARANCE	DEPTH	DESIGNATION
SS1	See Figure 3	Gray/dark gray, Greenish gray, silty clay w/ gravel, debris	8-12 in	Shallow grab sample
SS2	See Figure 3	Dark gray, fine/med. gravel w/ some sand	0-1 in	Shallow grab sample
SS3	See Figure 3	Gray, moist, silty gravel	0-2 in	Shallow grab sample
SS4	See Figure 3	Brown/gray, silty clay. w/ some sand	24-36 in	Deep grab sample
SS5	See Figure 3	Gray, silty clay, w/ gravel	32-36 in	Deep grab sample
SS6	See Figure 3	Gray, brown, silty clay, slightly moist	10-16 in	Shallow grab sample
SS7	See Figure 3	Brown clay, debris, brick, slight water on top of moist clay	12-16 in	Shallow grab sample
SS8	See Figure 3	Gray/brown, moist clay w/ sand and debris	10-30 in	Deep grab sample
SS9	See Figure 3	Moist dark gray to black silty clay w/ traces of sand and gravel	14-22 in	Deep grab sample
SS10	See Figure 3	Light brown silty clay w/ traces of sand and gravel - fill, lots of bricks	10-30 in	Deep grab sample
SS11	See Figure 3	Gray, moist, clay/ gravel	0-3 in	Shallow grab sample

TABLE 2
SOIL SAMPLE SUMMARY

SAMPLE #	CONTAMINANT	SAMPLE CONCENTRATION	PART 201 RESIDENTIAL DIRECT CONTACT CLEANUP CRITERIA	PART 201 INDUSTRIAL DIRECT CONTACT CLEANUP CRITERIA
SS1	<u>Semi-volatiles</u>	<u>($\mu\text{g/kg}$)</u>	<u>($\mu\text{g/kg}$)</u>	<u>($\mu\text{g/kg}$)</u>
	Benzo(a)pyrene	1,500	1,400	21,000
	<u>Inorganics</u>	<u>(mg/kg)</u>	<u>(mg/kg)</u>	<u>(mg/kg)</u>
	Arsenic	7.3	5.5	83
SS2	<u>Semi-volatiles</u>	<u>($\mu\text{g/kg}$)</u>	<u>($\mu\text{g/kg}$)</u>	<u>($\mu\text{g/kg}$)</u>
	Benzo(a)pyrene	3,800E	1,400	21,000
	<u>Inorganics</u>	<u>(mg/kg)</u>	<u>(mg/kg)</u>	<u>(mg/kg)</u>
	Manganese	15,800	2,000	22,000
SS3	<u>Inorganics</u>	<u>(mg/kg)</u>	<u>(mg/kg)</u>	<u>(mg/kg)</u>
	Manganese	17,500	2,000	22,000
SS4	<u>Inorganics</u>	<u>(mg/kg)</u>	<u>(mg/kg)</u>	<u>(mg/kg)</u>
	Arsenic	6.5	5.5	83
SS5	No contaminants detected at or above Part 201 criteria in this sample.			
SS6	<u>Inorganics</u>	<u>(mg/kg)</u>	<u>(mg/kg)</u>	<u>(mg/kg)</u>
	Arsenic	6.8	5.5	83
SS7	<u>Inorganics</u>	<u>(mg/kg)</u>	<u>(mg/kg)</u>	<u>(mg/kg)</u>
	Arsenic	7.0	5.5	83
	Manganese	3,990	2,000	22,000
SS8	<u>Inorganics</u>	<u>(mg/kg)</u>	<u>(mg/kg)</u>	<u>(mg/kg)</u>
	Arsenic	5.9	5.5	83
SS9	<u>Inorganics</u>	<u>(mg/kg)</u>	<u>(mg/kg)</u>	<u>(mg/kg)</u>
	Arsenic	7.4	5.5	83

TABLE 2

SOIL SAMPLE SUMMARY (CONT.)

SAMPLE #	CONTAMINANT	SAMPLE CONCENTRATION	PART 201 RESIDENTIAL DIRECT CONTACT CLEANUP CRITERIA	PART 201 INDUSTRIAL DIRECT CONTACT CLEANUP CRITERIA
			(mg/kg)	(mg/kg)
SS10	<i>Inorganics</i>	(mg/kg)	(mg/kg)	(mg/kg)
	Arsenic	7.4	5.5	83
SS11	<i>Inorganics</i>	(mg/kg)	(mg/kg)	(mg/kg)
	Manganese	3,990	2,000	22,000

$\mu\text{g/kg}$ = microgram/kilogram (parts per billion (ppb)).

mg/kg = milligram/kilogram (parts per million (ppm)).

A total of eleven (11) surficial soil samples were collected during the BFRA.

TABLE 3**SOIL BORING SAMPLE DESCRIPTIONS**

SAMPLE#	LOCATION	APPEARANCE	DEPTH	DESIGNATION
SS1	See Figure 4	Tan-gray, sandy clay w/ pebbles, moist dry hole	4-8 ft	Soil boring sample
SS2	See Figure 4	Gray clay w/ sand	4-6 ft	Soil boring sample
SS3	See Figure 4	Tan-orange clay	4-8 ft	Soil boring sample
SS4	See Figure 4	Tan, gray, green clay w/ some gravel, hydrocarbon odor noticed	4-8 ft	Soil boring sample
SS5	See Figure 4	Moist, gray clay w/ some gravel, black sand	4-8 ft	Soil boring sample

APPENDIX A

BFRA PROPERTY PHOTOGRAPHS

FIELD PHOTOGRAPHY LOG SHEET

N

SITE NAME: **JEFFERSON/CHENE**

PAGE: 1 OF: 16

U.S. EPA ID #: **MIB000000002**

DATE: **11/28/95**

TIME: **1145**

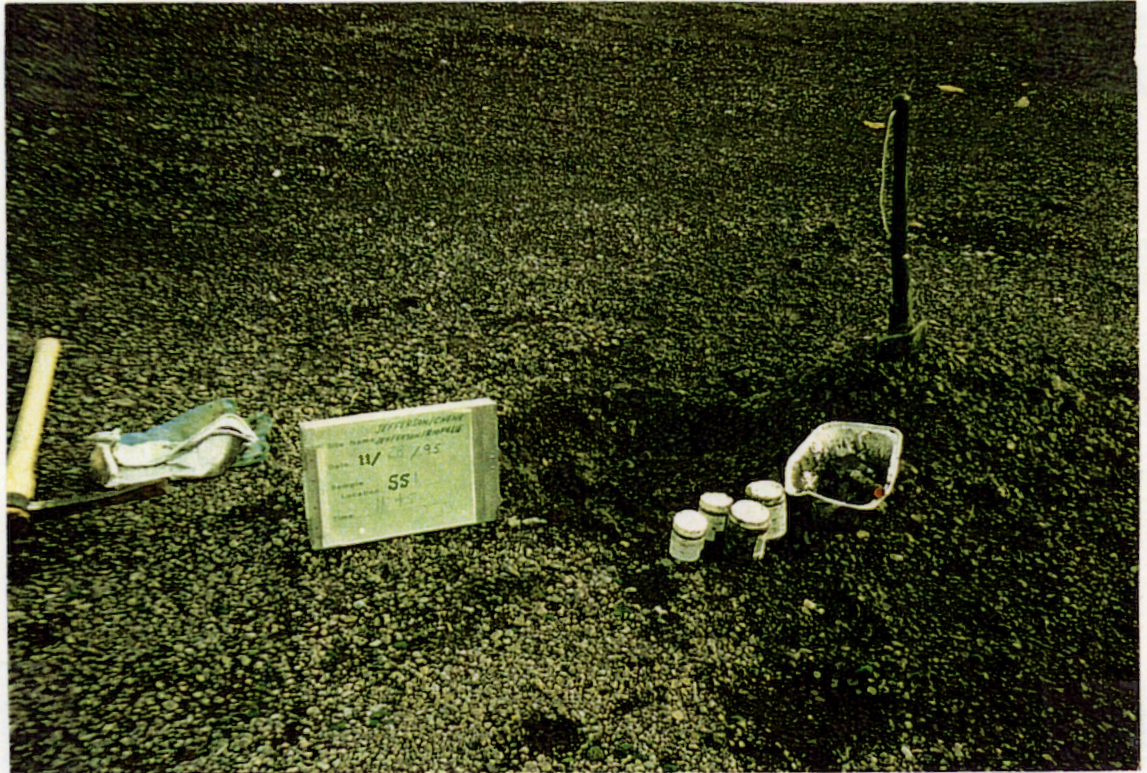
DIRECTION OF
PHOTOGRAPH:
N/A

WEATHER
CONDITIONS:
**Partly cloudy,
and cool.**

TEMPERATURE:
30 F

PHOTOGRAPH BY:
Sakowski

SAMPLE ID:
SS-1



DESCRIPTION:
Photo of Soil Sample one.

DATE: **11/28/95**

TIME: **1145**

DIRECTION OF
PHOTOGRAPH:
N/A

WEATHER
CONDITIONS:
**Partly cloudy,
and cool.**

TEMPERATURE:
30 F

PHOTOGRAPH BY:
Sakowski

SAMPLE ID:
SS-1



DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: JEFFERSON/CHENE

PAGE: 2

OF: 16

U.S. EPA ID #: MIB000000002

DATE: 11/28/95

TIME: 1130

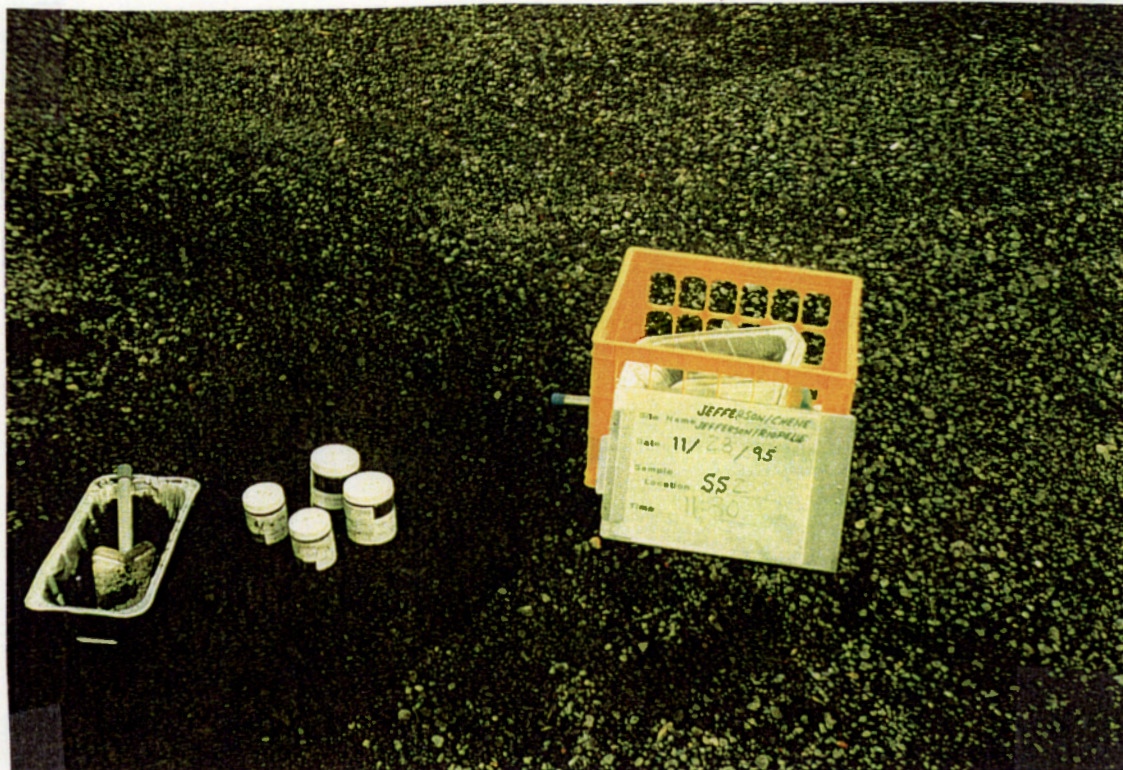
DIRECTION OF
PHOTOGRAPH:
N/A

WEATHER
CONDITIONS:
Partly cloudy,
and cool.

TEMPERATURE:
30 F

PHOTOGRAPH BY:
Sakowski

SAMPLE ID:
SS-2



DESCRIPTION:
Photo of Soil Sample two.

DATE: 11/28/95

TIME: 1130

DIRECTION OF
PHOTOGRAPH:
N/A

WEATHER
CONDITIONS:
Partly cloudy,
and cool.

TEMPERATURE:
30 F

PHOTOGRAPH BY:
Sakowski

SAMPLE ID:
SS-2



DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: JEFFERSON/CHENE

PAGE: 3 OF: 16

U.S. EPA ID #: MIB000000002

DATE: 11/28/95

TIME: 1220

DIRECTION OF
PHOTOGRAPH:
N/A

WEATHER
CONDITIONS:
Partly sunny.
and cool.

TEMPERATURE:
35 F

PHOTOGRAPH BY:
Sakowski

SAMPLE ID:
SS-3



DESCRIPTION:
Photo of Soil Sample three.

DATE: 11/28/95

TIME: 1220

DIRECTION OF
PHOTOGRAPH:
N/A

WEATHER
CONDITIONS:
Partly sunny.
and cool.

TEMPERATURE:
35 F

PHOTOGRAPH BY:
Sakowski

SAMPLE ID:
SS-3



DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: JEFFERSON/CHENE

PAGE: 4

OF: 16

U.S. EPA ID #: MIB000000002

DATE: 11/28/95

TIME: 1245

DIRECTION OF
PHOTOGRAPH:
N/A

WEATHER
CONDITIONS:
Partly sunny,
and cool.

TEMPERATURE:
35 F

PHOTOGRAPH BY:
Sakowski

SAMPLE ID:
SS-4



DESCRIPTION:
Photo of Soil Sample four.

DATE: 11/28/95

TIME: 1245

DIRECTION OF
PHOTOGRAPH:
N/A

WEATHER
CONDITIONS:
Partly sunny,
and cool.

TEMPERATURE:
35 F

PHOTOGRAPH BY:
Sakowski

SAMPLE ID:
SS-4



DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/CHENE**

PAGE: 5

OF:

16

U.S. EPA ID #: **MIB000000002**

DATE: **11/28/95**

TIME: **1430**

DIRECTION OF
PHOTOGRAPH:
N/A

WEATHER
CONDITIONS:
**Partly sunny,
and cool.**

TEMPERATURE:
35 F

PHOTOGRAPH BY:
Sakowski

SAMPLE ID:
SS-5



DESCRIPTION:
Photo of Soil Sample five.

DATE: **11/28/95**

TIME: **1430**

DIRECTION OF
PHOTOGRAPH:
N/A

WEATHER
CONDITIONS:
**Partly sunny,
and cool.**

TEMPERATURE:
35 F

PHOTOGRAPH BY:
Sakowski

SAMPLE ID:
SS-5



DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: JEFFERSON/CHENE

PAGE: 6

OF: 16

U.S. EPA ID #: MIB000000002

DATE: 11/28/95

TIME: 1345

DIRECTION OF
PHOTOGRAPH:
N/A

WEATHER
CONDITIONS:
Partly sunny,
and cool.

TEMPERATURE:
35 F

PHOTOGRAPH BY:
Sakowski

SAMPLE ID:
SS-6



DESCRIPTION:
Photo of Soil Sample six.

DATE: 11/28/95

TIME: 1345

DIRECTION OF
PHOTOGRAPH:
N/A

WEATHER
CONDITIONS:
Partly sunny,
and cool.

TEMPERATURE:
35 F

PHOTOGRAPH BY:
Sakowski

SAMPLE ID:
SS-6



DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: JEFFERSON/CHENE

PAGE: 7

OF: 16

U.S. EPA ID #: MIB000000002

DATE: 11/28/95

TIME: 1505

DIRECTION OF
PHOTOGRAPH:
N/A

WEATHER
CONDITIONS:
Partly sunny,
and cool.

TEMPERATURE:
35 F

PHOTOGRAPH BY:
Sakowski

SAMPLE ID:
SS-7



DESCRIPTION:
Photo of Soil Sample seven.

DATE: 11/28/95

TIME: 1505

DIRECTION OF
PHOTOGRAPH:
N/A

WEATHER
CONDITIONS:
Partly sunny,
and cool.

TEMPERATURE:
35 F

PHOTOGRAPH BY:
Sakowski

SAMPLE ID:
SS-7



DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: JEFFERSON/CHENE

PAGE: 8

OF: 16

U.S. EPA ID #: MIB000000002

DATE: 11/28/95

TIME: 1530

DIRECTION OF
PHOTOGRAPH:
N/A

WEATHER
CONDITIONS:
Partly sunny,
and cool.

TEMPERATURE:
35 F

PHOTOGRAPH BY:
Sakowski

SAMPLE ID:
SS-8



DESCRIPTION:
Photo of Soil Sample eight.

DATE: 11/28/95

TIME: 1530

DIRECTION OF
PHOTOGRAPH:
N/A

WEATHER
CONDITIONS:
Partly sunny,
and cool.

TEMPERATURE:
35 F

PHOTOGRAPH BY:
Sakowski

SAMPLE ID:
SS-8



DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/CHENE**

PAGE: 9 OF: 16

U.S. EPA ID #: **MIB000000002**

DATE: **11/28/95**

TIME: **1555**

DIRECTION OF
PHOTOGRAPH:
N/A

WEATHER
CONDITIONS:
Dusk, and clear

TEMPERATURE:
35 F

PHOTOGRAPH BY:
Sakowski

SAMPLE ID:
SS-9



DESCRIPTION:
Photo of Soil Sample nine.

DATE: **11/28/95**

TIME: **1555**

DIRECTION OF
PHOTOGRAPH:
N/A

WEATHER
CONDITIONS:
Dusk, and clear

TEMPERATURE:
35 F

PHOTOGRAPH BY:
Sakowski

SAMPLE ID:
SS-9



DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: JEFFERSON/CHENE

PAGE: 10 OF: 16

U.S. EPA ID #: MIB000000002

DATE: 11/28/95

TIME: 1620

DIRECTION OF
PHOTOGRAPH:
N/A

WEATHER
CONDITIONS:
Dusk, and clear

TEMPERATURE:
30 F

PHOTOGRAPH BY:
Sakowski

SAMPLE ID:
SS-10



DESCRIPTION:
Photo of Soil Sample ten.

DATE: 11/28/95

TIME: 1620

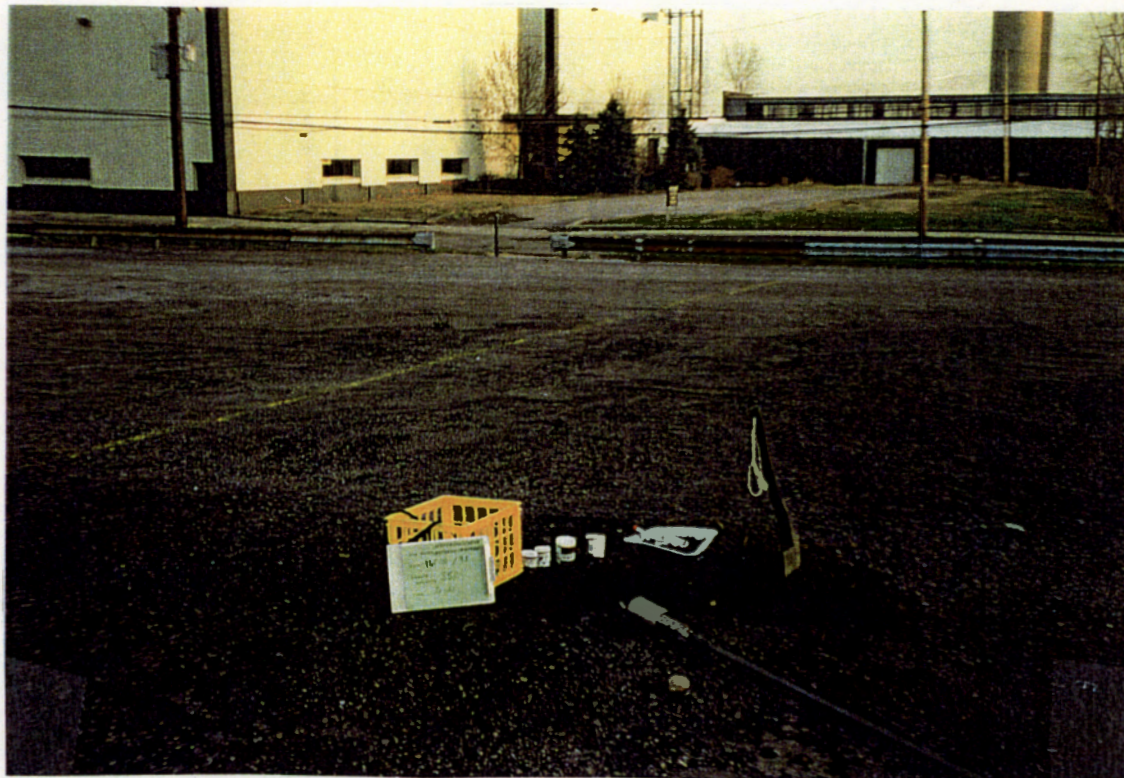
DIRECTION OF
PHOTOGRAPH:
N/A

WEATHER
CONDITIONS:
Dusk, and clear

TEMPERATURE:
30 F

PHOTOGRAPH BY:
Sakowski

SAMPLE ID:
SS-10



DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: JEFFERSON/CHENE

PAGE: 11 OF: 16

U.S. EPA ID #: MIB000000002

DATE: 11/28/95

TIME: 1615

DIRECTION OF
PHOTOGRAPH:
N/A

WEATHER
CONDITIONS:
Dusk, and clear

TEMPERATURE:
30 F

PHOTOGRAPH BY:
Sakowski

SAMPLE ID:
SS-11



DESCRIPTION:
Photo of Soil Sample eleven.

DATE: 11/28/95

TIME: 1615

DIRECTION OF
PHOTOGRAPH:
N/A

WEATHER
CONDITIONS:
Dusk, and clear

TEMPERATURE:
30 F

PHOTOGRAPH BY:
Sakowski

SAMPLE ID:
SS-11



DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: JEFFERSON/CHENE

PAGE: 12 OF: 16

U.S. EPA ID #: MIB000000002

DATE: 11/28/95

TIME: 1550

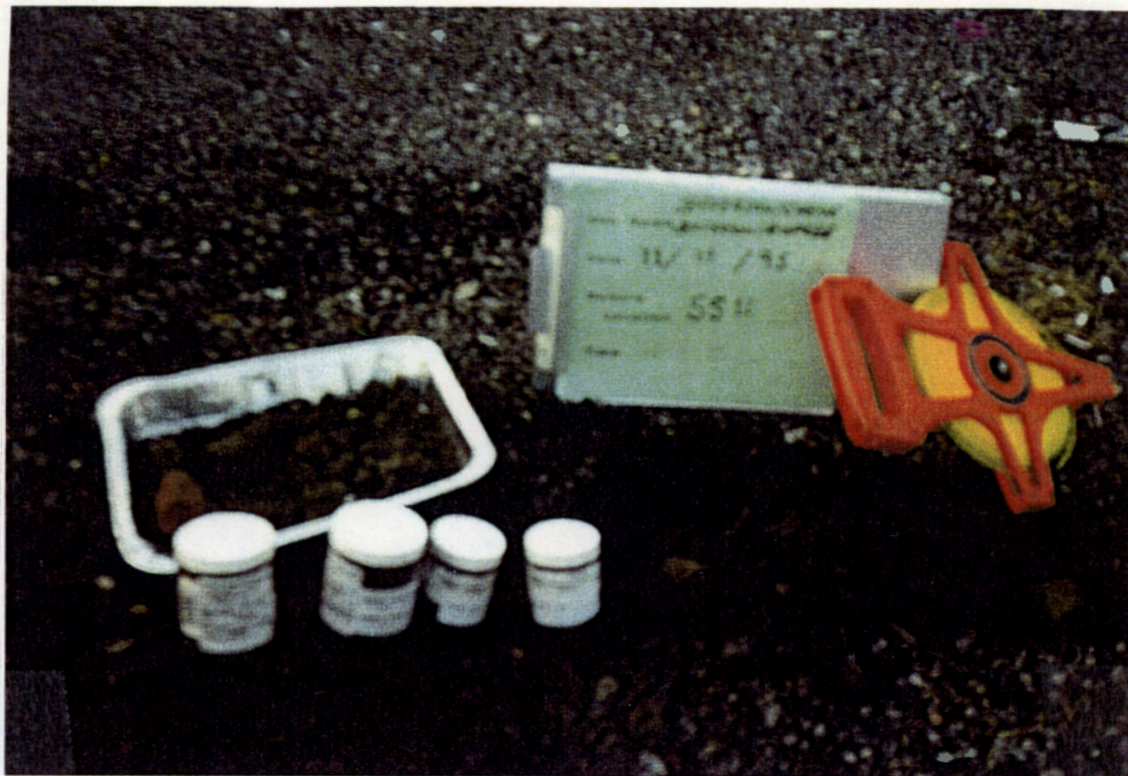
DIRECTION OF
PHOTOGRAPH:
NW

WEATHER
CONDITIONS:
Sunny

TEMPERATURE:
32 F

PHOTOGRAPH BY:
Chavez

SAMPLE ID:
SB-1
(Formerly SS-12)



DESCRIPTION:
Photo of Soil Boring Sample one (Formerly Soil Sample twelve).

DATE: 11/28/95

TIME: 1550

DIRECTION OF
PHOTOGRAPH:
NW

WEATHER
CONDITIONS:
Sunny

TEMPERATURE:
32 F

PHOTOGRAPH BY:
Sakowski

SAMPLE ID:
SB-1
(Formerly SS-12)



DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: JEFFERSON/CHENE

PAGE: 13 OF: 16

U.S. EPA ID #: MIB000000002

DATE: 11/28/95

TIME: 1500

DIRECTION OF
PHOTOGRAPH:
S

WEATHER
CONDITIONS:
Sunny and cold

TEMPERATURE:
30 F

PHOTOGRAPH BY:
Ducsay

SAMPLE ID:
SB-2
(Formerly SS-13)



DESCRIPTION:
Photo of Soil Boring Sample two (Formerly Soil Sample thirteen).

DATE: 11/28/95

TIME: 1500

DIRECTION OF
PHOTOGRAPH:
S

WEATHER
CONDITIONS:
Sunny and cool

TEMPERATURE:
30 F

PHOTOGRAPH BY:
Ducsay

SAMPLE ID:
SB-2
(Formerly SS-13)



DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: JEFFERSON/CHENE

PAGE: 14 OF: 16

U.S. EPA ID #: MIB000000002

DATE: 11/28/95

TIME: 1515

DIRECTION OF
PHOTOGRAPH:
N

WEATHER
CONDITIONS:
Sunny and cool

TEMPERATURE:
32 F

PHOTOGRAPH BY:
Chavez

SAMPLE ID:
SB3
(Formerly SS-14)



DESCRIPTION:
Photo of Soil Boring Sample three (Formerly Soil Sample fourteen).

DATE: 11/28/95

TIME: 1515

DIRECTION OF
PHOTOGRAPH:
N

WEATHER
CONDITIONS:
Sunny and cool

TEMPERATURE:
32 F

PHOTOGRAPH BY:
Chavez

SAMPLE ID:
SB-3
(Formerly SS-14)



DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: JEFFERSON/CHENE

PAGE: 15 OF: 16

U.S. EPA ID #: MIB000000002

DATE: 11/28/95

TIME: 1630

DIRECTION OF
PHOTOGRAPH: SW

WEATHER
CONDITIONS: Sunny

TEMPERATURE:
32 F

PHOTOGRAPH BY:
Chavez

SAMPLE ID:
SB-4
(Formerly SS-15)



DESCRIPTION:
Photo of Soil Boring Sample four (Formerly Soil Sample fifteen).

DATE: 11/28/95

TIME: 1630

DIRECTION OF
PHOTOGRAPH: SW

WEATHER
CONDITIONS: Sunny

TEMPERATURE:
32 F

PHOTOGRAPH BY:
Chavez

SAMPLE ID:
SB-4
(Formerly SS-15)



DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: JEFFERSON/CHENE

PAGE: 16 OF: 16

U.S. EPA ID #: MIB000000002

DATE: 11/28/95

TIME: 1210

DIRECTION OF
PHOTOGRAPH:
SW

WEATHER
CONDITIONS:
Partly cloudy,
and cool.

TEMPERATURE:
28 F

PHOTOGRAPH BY:
Seif

SAMPLE ID:
SB-5
(Formerly SS-16)



DESCRIPTION:
Photo of Soil Boring Sample five (Formerly Soil Sample sixteen).

DATE: 11/28/95

TIME: 1210

DIRECTION OF
PHOTOGRAPH:
SW

WEATHER
CONDITIONS:
Partly cloudy,
and cool.

TEMPERATURE:
28 F

PHOTOGRAPH BY:
Seif

SAMPLE ID:
SB-5
(Formerly SS-16)



DESCRIPTION:
Long view of sample location.

APPENDIX B

MDCH HEALTH CONSULTATION REPORT

APPENDIX C

CHEMICAL ANALYSIS OF BFRA DATA

SAMPLE NUMBERS FOR

JEFFERSON/CHENE

<u>NEW SAMPLE #</u>	<u>OLD SAMPLE #</u>	<u>ORG. TRAFFIC</u> <u>REPORT #</u>	<u>INORG. TRAFFIC</u> <u>REPORT #</u>
SS1	SS1	EASS1	MEAGL1
SS2	SS2	EASS2	MEAGL2
SS3	SS3	EASS3	MEAGL3
SS4	SS4	EASS4	MEAGL4
SS5	SS5	EASS5	MEAGL5
SS6	SS6	EASS6	MEAGL6
SS7	SS7	EASS7	MEAGL7
SS8	SS8	EASS8	MEAGL8
SS9	SS9	EASS9	MEAGL9
SS10	SS10	EAST0	MEAGM0
SS11	SS11	EAST1	MEAGM1
SB1	SS12	EAST2	MEAGM2
SB2	SS13	EAST3	MEAGM3
SB3	SS14	EAST4	MEAGM4
SB4	SS15	EAST5	MEAGM5
SB5	SS16	EAST6	MEAGM6

NOTE

THE CHEMICAL ANALYSIS DATA FOR THE JEFFERSON/CHENE
PROPERTY IS INCLUDED IN THE JEFFERSON/RIOPELLE PROPERTY BFRA
REPORT.